

APPENDIX N

OPERATING PROCEDURES

The following Operating Procedures will be used by all Authorized Users to remove, transport, use and return the gauge to storage. Any deviations from these Operating Procedures must be approved by the Radiation Safety Officer.

Preparation for Work

1. If personnel monitoring is provided:
 - Always wear your assigned badge when using the gauge.
 - Never wear another person's badge.
 - Never store your badge near the gauge.
2. Before removing the gauge from its place of storage, ensure that, where applicable, each gauge source is in the fully shielded position and that in gauges with a movable rod containing a sealed source, the source rod is locked (e.g., keyed lock, padlock, mechanical control) in the shielded position. Place the gauge in the transport case and lock the case.
3. Sign out the gauge in a Utilization Log book (that remains at the storage location) including the date(s) of use, name(s) of the authorized users who will be responsible for the gauge, and the temporary jobsite(s) where the gauge will be used.
4. Block and brace the gauge to prevent movement during transport and lock the gauge in or to the vehicle. Follow all applicable Department of Transportation (DOT) requirements when transporting the gauge.

Using the Gauge

1. Use the gauge according to the manufacturer's instructions and recommendations and the Operating Procedures and Emergency Procedures.

The gauge will also be used in a manner that will keep radiation doses **As Low As is Reasonably Achievable (ALARA)** by:

- Minimize the **TIME** spent in close proximity to the gauge (the shorter the time, the lower the dose);

- Maximize the **DISTANCE** from the gauge (doubling the distance reduces radiation intensity); and
 - Make use of available **SHIELDING** to block out radiation.
2. Establish and maintain constant surveillance of the restricted area and always keep unauthorized persons away from the gauge.
 3. Do not touch the unshielded source rod with your fingers, hands, or any part of your body.
 4. Do not place hands, fingers, feet, or other body parts in the radiation field from an unshielded source.
 5. Unless absolutely necessary, do not look under the gauge when the source rod is being lowered into the ground. If you must look under the gauge to align the source rod with the hole, follow the manufacturer's procedures to minimize radiation exposure.
 6. After completing each measurement in which the source is unshielded, immediately return the source to the shielded position.
 7. Always maintain constant surveillance and immediate control of the gauge when it is not in storage. At job sites, do not walk away from the gauge when it is left on the ground. Take actions necessary to protect the gauge and yourself from danger of moving heavy equipment.
 8. Always keep unauthorized persons away from the gauge.
 9. Perform routine cleaning and maintenance according to the manufacturer's instructions and recommendations.
 10. When the gauge is not in use at a temporary jobsite, place the gauge in a secured storage location (e.g., locked in the trunk of a car or locked in a storage shed).
 11. Do not smoke, eat, drink, or store any of these types of products in the use or storage area of the gauges containing radioactive material.

Completing the Work

1. Prior to transporting the gauge, ensure that, where applicable, each gauge source is in the fully shielded position. Ensure that in gauges with a movable source rod, the source rod is locked in the shielded position (e.g., keyed lock, padlock, mechanical control). Place the gauge in the transport case and lock the case.

Block and brace the case to prevent movement during transportation. Lock the case in or to the vehicle.

2. Return the gauge to its proper locked storage location at the end of the work shift.
3. Log the gauge into the Utilization Log when it is returned to storage.
4. After making changes affecting the gauge storage area (e.g., changing the location of gauges within the storage area, removing shielding, adding gauges, changing the occupancy of adjacent areas, moving the storage area to a new location), reevaluate compliance with public dose limits and ensure proper security of gauges.

Maintaining the Gauge

1. Personnel monitoring badges will always be worn when performing non-routine maintenance on the gauge.
2. Routine cleaning and maintenance of the gauge will be performed in accordance with the manufacturer's instructions and recommendations.
3. No maintenance will be performed on the gauge that includes removing the radioactive source from the gauge. Any maintenance that is not included in the manufacturer's instructions and recommendations will be performed by the manufacturer or by another person who is specifically licensed to perform the maintenance.
4. A Quarterly Inventory of all gauges will be performed by the Radiation Safety Officer or their designee. Records of the inventory shall be maintained on file for inspection purposes and shall be retained for at least 3 years following the date the record was created.
5. Leak testing of the radioactive sources will be performed and documented every six months in accordance with the Radioactive Material License. Gauges that do not have a current leak test will not be used.